

has had a hole burned in his trousers with the assistance of a mischievous neighbor, is not used in this case. The mirrors reflect the solar rays so that they are concentrated upon the boiler. This boiler looks innocent enough in the picture, but it is the business end of the machine. It is 13 feet, 6 inches long, and made of fire-box steel. The pipe which conducts the steam from the little dome at the top of the boiler to the engine-house, close at hand, is flexible and entirely metallic, being made of phosphor-bronze.

The operation of the Solar Motor is quite simple. The effort has been to make it entirely automatic so that the saving in the item of labor might be as complete as the saving in the item of fuel. In the morning the reflector must be brought into focus. A boy can do this by turning a hand lever. In an hour the engine is ready to start, with 150 pounds of steam showing on the gage. A turn of the throttle valve starts the engine and the pump is soon in full operation. "But," says some one, "the sun is travelling all day." Yes, and the reflector travels with it. This is accomplished by means of a clock-work arrangement which releases the reflector once each minute, so that it keeps in true focus all day long, driving the engine from within

LOST Mertie Lovell, of Ackley, Iowa, wants to know the whereabouts of her brother, Byron Lovell. An estate will be due him.

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an hour and a half of sunrise to half an hour of sunset. This means about eight hours' work in winter and about thirteen in summer. It is expected that the motor will be good for fifteen horse power in the summer when the sun falls vertically and is therefore more effective. Difference in atmospheric temperature makes no appreciable difference in the heat of the boiler, but with a low winter sun the solar rays must penetrate a greater depth of atmosphere about the earth. This reduces the efficiency of the motor somewhat. Its present trial is under conditions by no means the best. It will be interesting to see what it will do in the Salt River valley of Arizona in a long summer day when the sun comes down like—well, like a thousand of brick, to put it mildly!

To describe the manner in which the large reflector is mounted, how it is balanced and how secured so that it is practically beyond danger of high winds, and to tell how everything has been arranged and adjusted to enable the device to take the utmost advantage of our western sunshine, would be a very long story, involving a lecture not only on practical mechanics, but solar physics as well. But it should be said that this wonderful machine is no pretty toy or childish experiment. It is the triumphant result of many years of earnest effort on the part of scientific men. From the day of Archimedes, who was said to have fired the ships in the harbor of Syracuse by using a reflector to concentrate the sun's rays upon them, to the days of Ericsson, who bestowed his thought on solar engines long before and long after he gave us the Monitor, eminent physicists have wrestled with this problem. The inventor of the present device has familiarized himself with all the learning on the subject and has himself contributed much of value to its data. The fact that his name is not yet known to the public in this connection is pretty good evidence that he is no bombastic seeker of foolish notoriety.

The old saying, "Make hay while the sun shines," is now to be practically illustrated in another way from the original thought. After the solar motor is used to pump water to irrigate alfalfa no diagram will be necessary to illustrate this new application of an old adage.

Books Received.

Wendell Phillips, the Agitator, by Carlos Martyn; published by Funk & Wagnalls, New York.
The Immortal Pilot, by Richard W. Boedinghaus; published by The Campbell Press, Chicago.
The Religion of Democracy, a memorandum of modern principles, by Chas. Ferguson; published by Funk & Wagnalls, New York.

The Trusts, What can we do with them and what can they do for us?, by William Miller Collier; published by The Baker & Taylor Co., New York.

Shattered Idols, John Marshall's Doctrine of Implied Powers, by a lawyer; published by the Schulte Publishing Co., Chicago.

Light on the Deep, by George Henry Grafton; published by the Neale Co., Washington, D. C.

Notes on Ingersoll, by Rev. L. A. Lambert; published by Catholic Union, Buffalo.

Tactics of Infidels, by Rev. L. A. Lambert; published by Peter Paul & Brothers, Buffalo, N. Y.

A Critical Criticiser Criticised, or Ingersoll's Gospel Analyzed, by Page A. Cochran; published by the author at St. Albans, Vt.

Liberty Poems, a collection of poems inspired by the crisis of 1898-1900; published by The Jas. H. West Co., Boston.

The Adventures of Theodore, a humorous extravaganza as related by Jim Higgers to one of the Rough Riders; published by The H. J. Smith & Devereaux Co., Chicago.

A Stepdaughter of Israel, by Robert Boggs; published by F. Tennyson Neely Co., New York and Chicago.

Christus Auctor, a manual of Christian evidences, by Warren A. Candler, D. D., LL. D.; published by the M. E. Church South, Nashville and Dallas.

The Financial Law of March 14th, 1900, with an appeal for its reinvestigation, by John A. Grier; published by a committee of silver republicans of Illinois, 345 53rd street, Hyde Park, Chicago.

Vineland, or the Norse Discovery of America, an historical poem, by Perry Marshall; published by Chas. H. Kerr & Co., Chicago.

The Eagle and the Sparrow

An Eagle on his lofty perch on Liberty Mountain saw a Sparrow on an island below sorely beset by a cruel Hawk.

The little bird was plucked and bleeding in the claws of its merciless foe. Suddenly the Eagle emitted a cry of Anger and Warning, and screamed:

"The Sparrow is, and of right ought to be, free and independent."

And he notified the Hawk that if he did not at once release his prey and quit the island he would forthwith eject him with beak and talon.

At the same time the chivalric Eagle proclaimed to all the birds of the air and beasts of the field that his only purpose in interfering was the salvation of the Sparrow, and that as soon as the Piratical Hawk was driven off forever he would leave the government and control of the island to its native birds.

After a short but sharp fight the Hawk was whipped into the semblance of a pigeon, and, 'defeathered' and crestfallen, took his departure for his own land.

Did the Eagle then keep his promise? Or did he say to the Sparrow: "You must permit me to boss your next building—to say what company you shall keep—and give me a permanent roosting place in your tree; in short, you are to be free only to the length of my leading-string?"

It remains to be heard just what the Eagle finally said to the Sparrow.—New York World.

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